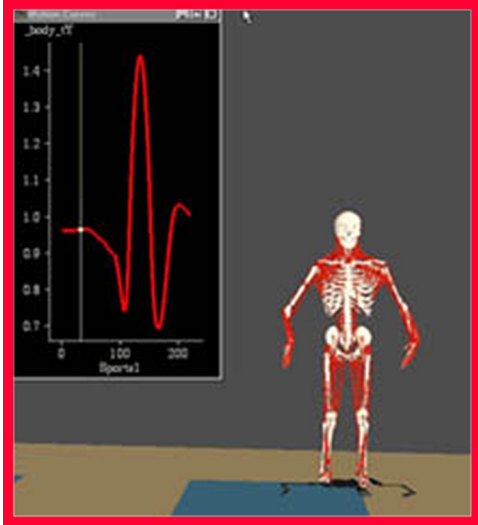


SIMM



SIMM (Software for Interactive Musculoskeletal Modeling) is a graphics-based software package that enables the customer to quickly develop and analyze musculoskeletal models. In SIMM, a musculoskeletal model consists of representations of bones, muscles, ligaments, and other structures. Muscles span the joints and develop force, thus generating moments about the joints. SIMM enables an analysis of a musculoskeletal model by calculating the joint moments that each muscle can generate at any body position. By manipulating a model using the graphical interface, the customer can quickly explore the effects of changing musculoskeletal geometry and other model parameters on the muscle forces and joint moments.

FEATURES

Muscle Wrapping You can interactively define spheres, ellipsoids, and cylinders for muscle-tendon actuators to wrap over. SIMM automatically calculates muscle paths over these wrapping objects. Muscle lengths, forces, and moment arms are all calculated correctly for the new, wrapped muscle.

Bone deformations A powerful new tool allows you to warp bones into new shapes to model various bony deformities. Deformations such as tibial torsion and femoral anteversion are straightforward to model and can be implemented with a range of severity of deformation.

Model Scaling A scaling utility is able to scale your existing model to match any size individual. Body segments (and corresponding joints kinematics) can be individually scaled by specifying X, Y, Z scale factors for each segment. Muscle paths are scaled with the segments, but muscle force-generating parameters are not scaled.

